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XVI.—CHINESE RHODODENDRONS:

DETERMINATIONS AND DESCRIPTIONS OF NEW SPECIES.

W. BOTTING HEMSLEY and E. H. WILSON.

I.—INTRODUCTION.

Towards the end of 1906, and just previous to his departure on a third mission to China, Mr. E. H. Wilson devoted a considerable amount of time to the determination of the magnificent dried collections of Rhododendrons made on his two previous journeys, while Mr. W. B. Hemsley afforded him as much assistance as it was possible to give in unofficial hours. The intention was to publish jointly descriptions of the new species, on the plan followed in "Some New Chinese Plants," which appeared in the Kew Bulletin for 1906, pp. 147–163. Mr. Wilson finished his share of the work before his departure, but it had, of necessity, to be somewhat hurriedly done, and both authors felt that some further scrutiny was desirable before venturing on publication. Through the courtesy of Professor H. Lecomte, Director of the Paris Herbarium, the types of the numerous new species of Rhododendron described by the late Mr. A. Franchet were transmitted to Kew for purposes of comparison; but Mr. Hemsley found himself unable during the last two years of his official life to make further comparisons, and complete his share of the task. In the meantime, however, Mr. J. Hutchinson had made a rough classification of the Chinese species, named a number of previously undetermined specimens, and found reason to question the validity of some of the new species proposed by Messrs. Hemsley and Wilson.

During the past year Mr. Hemsley has re-examined most of the specimens and has adopted many of Mr. Hutchinson's suggestions. Even yet something doubtless remains to be done before a satisfactory classification of the species can be offered. Some of those proposed as new are based on slender characters, and it is to be suspected that one or two may be natural hybrids. Unfortunately Mr. Wilson, on his return from his third journey with further field experience, found himself unable, owing to the pressure of other work, to look through the material again with Mr. Hemsley before

leaving for America, so that in many instances Mr. Hemsley alone is responsible for the final determinations here published.

The following sketch of the *Rhododendron* vegetation of China was written by Mr. Wilson before his last journey, and he has had no opportunity of revising it; but the points dealt with are probably not susceptible of important modification. The original plan of the authors was limited to the publication of the new species in Mr. Wilson's collections, but the opportunity now offered has been taken to give determinations of all the specimens received at Kew since the appearance in 1889 of the enumeration of the species then known, published in the *Journal of the Linnean Society of London*, vol. xxvi. In doing this the numbers of the various collectors are cited, so that this addition may be of use to other institutions possessing sets of these dried plants.

A few modifications in the spelling of place-names have been admitted, the following being the most important:—Tatienlu for Tatsienlu; Szechuan for Szechuen; Omi for Omei, and Yangtze for Yangtze.

II. THE DISTRIBUTION OF RHODODENDRONS IN CHINA.

One of the outstanding features of recent botanical exploration in China is the wealth of *Rhododendrons* discovered. Up to the present time, and exclusive of the new species hereinafter described, no fewer than 134 species are known to occur in China proper: indeed, *Rhododendron* is one of the largest genera recorded from China.

The Index Kewensis enumerates to date (December, 1906) some 305 species of *Rhododendron* distributed as follows:—China proper, 134 species; Malaya, 62 species; British India, 46 species; Japan and Corea, 28 species; North America, 19 species; Orient, six species; Europe, four species; Siberia, three species; Arctic regions, two species; and Australia, one species. From Africa and from Central and South America the genus is absent. The above figures show conclusively that the headquarters of the genus is China. Now, a cursory knowledge of the distribution of the Chinese *Rhododendrons* is sufficient to prove that the centre of the greatest concentration of species is the wild and rugged region of the China-Tibet borderland—which region is a continuation of the Himalayas. The optimum is somewhere between Mupine, long. $102^{\circ} 30'$, lat. 31° about, and Tali, long. 100° , lat. $25^{\circ} 50'$ about. North of Mupine, *Rhododendrons* rapidly decrease in numbers, and in the extreme north-west of Szechuan and in Kansu, comparatively few species occur. The same obtains in the country south of Tali.

In China, the genus *Rhododendron* extends from sea-level to the limits of ligneous vegetation. There is no heather (*Calluna* or *Erica*) in China, and its place on the alpine moorlands is taken by dwarf, small-leaved *Rhododendrons* such as *R. fastigiatum*, *R. nigro-punctatum*, *R. intricatum*, and *R. blepharocalyx*.

The low-level species, such as *R. indicum* and *R. sinense*, are abundant on scrub-clad hills, but whilst the former extends from

the east to the west of the country, the latter scarcely occurs west of long. 112°. In Central and Western China, with the exception of the above two species and *R. Mariesii*, no *Rhododendron* occurs below 4000 ft. Above this altitude they occur in woods and forests in increasing numbers, reaching their optimum at about 11,000 ft. In the regions traversed by me, 15,500 ft. was the altitudinal limit of the genus. Farther west, however, it is somewhat higher. *Rhododendrons* are social plants, and at certain altitudes form immense thickets. At low levels, miles of the hillsides often are ablaze with the scarlet *R. indicum*. Up to 9000 ft. the *Rhododendrons* occur in constantly increasing numbers, in company with mixed dicotyledonous trees and shrubs and conifers. Above 9000 ft. they form the predominant shrubby vegetation, either as undergrowth in the conifer forests or above the tree limit, where they form impenetrable thickets. In late May and June these areas present a scene of indescribable beauty.

In stature, Chinese *Rhododendrons* vary from tiny plants six inches high (*R. nigro-punctatum*) to trees 40 feet high (*R. calophytum*). But omitting extremes, they are as a rule bushes from 6-20 feet high and as much in diameter.

Epiphytic species are rare, and only two, *R. dendrocharis* and *R. moupinense*, have been met with. The first-named is very common on coniferous trees, especially on *Abies Fargesii* and *Tsuga yunnanensis*. *R. moupinense* occurs on evergreen oaks and dicotyledonous trees generally. Both species are dwarf and twiggy, and at a distance are suggestive of species of *Loranthus*. But whilst true epiphytes are rare in the depths of coniferous forests, a large percentage of the *Rhododendron* bushes occur growing on the rotting trunks of fallen forest giants.

In colour the Chinese *Rhododendrons* range from the purest white, the clearest and richest yellow, the varying shades of red, the deepest and richest shades of crimson, to the darkest purple. In size the flowers may vary in diameter from less than a third of an inch (*R. anthopogonoides*) to three inches, *R. excellens*. With rare exceptions (*R. sinense*, *R. indicum*, *R. micranthum*, *R. Mariesii*, and possibly a few others) all the species are remarkably local, whether in longitudinal, latitudinal or altitudinal range. With the exception of *R. stamineum* none of the Hupeh species occur in western Szechuan. Very few of Père Delavay's Yunnan species are to be found even in South Szechuan although the regions are contiguous. The species collected by Père Bodinier in Kweichau Province are nearly all different from those collected in the adjoining provinces of Hupeh, Yunnan and Szechuan. The last collections to reach Kew from China are one made by Père Monbeig near Tsekou, a town on the Mekong river in the extreme north-west of Yunnan, and another from South-Western China, composed of very fine specimens, made by Mr. G. Forrest and presented by Dr. Bayley Balfour, F.R.S. Of the seventeen species of *Rhododendron* in Père Monbeig's collection, nearly half are new. With one exception all are distinct from those collected by me in a district two degrees of longitude east and two degrees of latitude north of Tsekou. Père Delavay approached to within 60 miles of Tsekou, yet only two of the species in Père Monbeig's collection were

met with by him. The altitudinal limit of any one species is well-defined, and within this limit a species monopolises its own particular region. This phenomenon is extremely interesting and often gives rise to distinct belts of colour. *R. Przewalskii* (*R. kialense*) attains the highest altitudinal range (14,500 ft.) of any of the large-leaved species.

The Chinese Rhododendrons form their own peculiar groups, some of which are extremely difficult to deal with taxonomically. It may be that these groups represent several or few distinct species, or possibly one or more variable species in which the individuals intercross and give rise to numerous intermediate forms. Many of the species hitherto described can only be regarded as provisional, and when our knowledge of these Chinese Rhododendrons is more complete a general revision will be necessary. A goodly number of them are now in cultivation in this country, and these should materially assist in elucidating some of the many problems necessarily connected with so large and unwieldy a genus.

The genus is difficult owing to the fact that good and obvious distinguishing characters are scarce; the calyx, capsule, tomentum and stamens perhaps yielding the chief diagnostic marks. Vegetative shoots, though very necessary, are most certainly insufficient in themselves. For this reason, and when the vast number of described species is borne in mind, it is not desirable to follow the example set in connection with two recently recognised species, *R. platypodon* and *R. coeloneuron*, and be content to base the recognition of new forms on the examination of vegetative shoots. The colloquial names given to these species—shan p' i-pa and chin p' i-pa shu—do not admit of practical application because the first is a general name with the Chinese for all the large-leaved Rhododendrons, whilst "chin" prefixed to the second name (though it might possibly mean among other things "clear" or "gold") signifies in all probability nothing more than green. Such vernacular appellations are commonly manufactured on the spur of the moment by natives of Eastern countries in response to the demand for a name.

The collection of Rhododendrons made by me in China consists of some 63 species. Seeds of practically all were sent home, and with very few exceptions the species are in cultivation with Messrs. J. Veitch & Son, in their Coombe Wood Nursery. From the altitude and latitude in which they occur, it is highly probable that nearly all will prove hardy and amenable to cultivation in this country.

The pleasure derived from working out this collection has been heightened by the fact of its affording the collector an opportunity of commemorating the names of various people to whom he had been indebted for hospitality and assistance in some form or other during his wanderings in China.

The use of nearly all of the late Mr. Franchet's types, for which Kew is indebted to the kindness of Mr. Lecomte, Director of the Paris collection, has rendered the task of determination very much easier than would otherwise have been possible.—E. H. W.

III.—ENUMERATIONS AND DESCRIPTIONS.

EURHODODENDRON.

I.—*Leaves not lepidote ; usually densely tomentose beneath.**

Rhododendron taliense, Franch. in *Bull. Soc. Bot. France*, xxxiii. 232 ; *Hemsl. in Journ. Linn. Soc.*, xxvi. 31.

SZECHUAN. *Wilson*, 3953, 3957, 3968, 3970.

We at first thought we could separate the specimens bearing the above numbers into three species, but the differences, chiefly in degree of hairiness of the petioles, pedicels and filaments, are insufficient. All the specimens agree in having a glabrous ovary.

Rhododendron Wasonii, *Hemsl. et E. H. Wils.* ; inter species foliis valde coriaceis subtus dense tomentosus (in siccis rufis) *R. taliensi* proxima, differt foliis suboppositis, floribus majoribus longius pedicellatis et ovario densissime furfuraceo-tomentoso. An varietas tantum *R. taliensis* ?—W. B. H.

Bush about 1 m. high ; branches thick, straight, hoary when young. *Leaves* scattered, sub-opposite, broadly-lanceolate or ovate, excluding the petioles 6-7 cm. long, 2.5-4 cm. broad, acute or cuspidate, base broadly cuneate or slightly auricled, glabrescent and slightly wrinkled above, densely clothed with reddish-brown felt beneath ; primary and secondary veins somewhat immersed on upper surface ; petioles thick, 5-8 mm. long, felted. *Buds* elongate ; scales about 1 cm. long, narrowly-oblong, acuminate or ovate, aristate. *Flowers* about six, in short corymbose racemes ; pink or creamy-white, 4-5 cm. across ; rachis sparsely pubescent ; pedicels stout, erect or nearly so, 1.5-2.5 cm. long, floccose. *Calyx* minute, oblique, annular, obscurely 5-toothed, densely floccose. *Corolla* broadly campanulate, slightly narrowed to base, 5-lobed, glabrous ; lobes erect-spreading, rounded or emarginate. *Stamens* 10, included ; filaments unequal, longest under 2 cm. in length, villous in the lower half. *Pistil* over-topping the stamens ; ovary 4-5 mm. long, furrowed, densely villous, hairs brownish. *Capsule* about 1 cm. long, 4 mm. broad, furrowed, densely clothed with loose brown felt ; calyx-teeth somewhat enlarged in fruit, obtuse.

SZECHUAN. Near Tatienu on rocks in coniferous forests, alt. 2800-3000 m., *Wilson*, 3955, 3956, 3969, 3969A.

No. 3956 has more villous filaments and a rather more elongated inflorescence than 3955, and 3969 has somewhat smaller flowers. Named in compliment to Mr. Cathcart Wason, R.N., in 1903-04 Lieut.-Commander of H.M.S. "Woodlark" at Chungking, on the upper Yangtze River, as a mark of appreciation of his kind offices.—E. H. W.

Rhododendron Faberii, *Hemsl. in Journ. Linn. Soc.* xxvi. 22. *R. Prattii*, Franch. in *Journ. de Bot.* ix. 389.

SZECHUAN. *Pratt*, 58, 89 ; *Wilson*, 3958, 3958A, 3959, 3960, 3961, 5142.

This belongs to a group of species, or varieties, having very thick leaves densely felted on the under surface, similar to those of *R. taliense*, but differing from the latter in having a well-developed petaloid calyx.

* As arranged in the Kew Herbarium by Mr. J. Hutchinson.

Rhododendron Brettii, *Hemsl. et E. H. Wils.*; ex affinitate *R. Faberii*, a quo differt foliis praeter costam subtus glabris, corymbis multifloris et floribus majoribus longius pedunculatis.—W. B. H.

Bush about 3 m. high; branches thick, densely clothed with rufous tomentum which persists for two or more years. *Leaves* crowded, oblong, lanceolate, excluding petiole 9–12 cm. long, 3–4 cm. broad, cuspidate or shortly acuminate, base slightly auricled; upper surface dark green, glabrous, somewhat wrinkled, lower surface pallid, glabrous; midrib immersed above, often felted at base, very prominent below, densely rufously tomentose, especially in lower half; petioles stout, 1–2 cm. long, rufously tomentose. *Flowers* twelve or more, subumbellate, multi-bracteate, pink with a dark red blotch, 5–6 cm. across; pedicel rather slender, spreading, 2.5–3 cm. long, densely glandular and sparsely pilose; bracts crowded amongst leaves and flowers, persistent, variable; outer thick, more or less subulate, flattened at base, 2–2.5 cm. long, rufously tomentose; inner membranous, spatulate or ovate-spatulate, 2–3.5 cm. long, rounded or obtuse, silkily pubescent. *Calyx* petaloid, 5-lobed, glandular and pilose, tube nearly obsolete, lobes oblong, 10–13 mm. long, 3–4 mm. broad, acute or obtuse, erect. *Corolla* widely-campanulate, narrowed to base, 5-lobed; tube pubescent within at base; lobes erect-spreading, broad, deeply emarginate. *Stamens* about 10, included; filaments unequal, 1.5–3 cm. long, villous in lower half. *Pistil* over-topping stamens; ovary about 4 mm. long, glandular and sparsely pilose; glands stalked; style with stalked glands in lower half; stigma very large. *Capsule* 1.5–2 cm. long, 8 mm. broad, furrowed, clothed with shortly-stalked glands; calyx lobes appressed to capsule.

SZECHUAN. Neighbourhood of Tatienlu, at 2750–3000 m. above sea-level, *Wilson* 3973.

A very striking and handsome species, not common. Named in commemoration of the kind hospitality and assistance given by Mr. H. J. Brett, of H.B.M.'s Chinese Consular Service, who was stationed at Chentu, Szechuan, in 1904.—E. H. W.

Rhododendron bullatum, *Franch.* in *Bull. Soc. Bot. France* xxxiv. 281; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 20.

YUNNAN. *Monbeig*, 10; *G. Forrest*, 4141.

Rhododendron floccigerum, *Franch.* in *Journ. de Bot.* xii. 259.

YUNNAN. *Tsekou*, *Monbeig*, 8.

Rhododendron sanguineum, *Franch.* in *Journ. de Bot.* xii. 259.

YUNNAN. *Tsekou*, *Monbeig*, 13, 14.

Rhododendron Bureavii, *Franch.* in *Bull. Soc. Bot. France* xxxiv. 281; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 21.

SZECHUAN. *Wilson*, 3954. YUNNAN. *G. Forrest*, 506.

Rhododendron haematodes, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 232; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 24.

YUNNAN. *G. Forrest*, 4130.

Rhododendron floribundum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 232.

SZECHUAN. *Wilson*, 3967.

Rhododendron Falconeri, Hook. f. *Rhod. Sik. Himal.* 11, t. 10; *Bot. Mag.* t. 4924.

YUNNAN. Mountains north of Mengtze at 3000 m., *A. Henry*, 9448; Great Black Mountain range at 3000 m., *W. Hancock*, 439.

Mr. Wilson was disposed to regard the Chinese specimens as specifically different from the Indian *R. Falconeri*, distinguished by the calyx, the constantly 7-lobed corolla and other slight differences, but further comparison of all the specimens at Kew is against this conclusion. He describes it as a tree about 6 metres high with leaves from 15–36 centimetres long and clusters of 12–20 pale yellow or primrose flowers.—W. B. H.

Rhododendron Wiltonii, Hemsl. et E. H. Wils.; species elegans *R. floribundo* proxima, ab eo tamen differt foliis minoribus obovatis vel oblanceolatis supra nitidis, genitaliis omnino inclusis et filamentis infra medium puberulis.—W. B. H.

Bush, 1.5–2.5 m. high; branches stout, more or less pubescent, often clothed with dark-coloured persistent bracts; bark rough, scaly. *Leaves* crowded, very coriaceous, oblong-cbovate, excluding petiole 5–8 cm. long, 2–3.5 cm. broad, apiculate or cuspidate, base narrowed to the petiole, shining green, rugose above, heavily clothed with loose brown felt beneath; midrib and secondary veins impressed above, much raised below; petioles 1.25–2 cm. long, more or less felted. *Flowers* six or more, surrounded by a cluster of bracts, sub-umbellate, pink with red spots, 3–4 cm. across; pedicels stout, spreading, 1.5–2.5 cm. long, floccose; bracts numerous, clustered among the flowers and leaves, linear-oblong-acuminate, spatulate or orbicular, floccose or glabrescent, many persisting for a year or more. *Calyx* minute, annular, obscurely 5-toothed, floccose; teeth obtuse. *Corolla* widely campanulate, 5-lobed, glabrous; lobes short, slightly spreading, rounded or emarginate. *Stamens* about 10, included; filaments unequal, 1–1.5 cm. long, dilated and somewhat villous below the middle. *Pistil* overtopping stamens; ovary 4–5 mm. long, very floccose; stigma small. *Capsule* cylindrical, 1.5–2.5 cm. long, 4–6 mm. broad, furrowed, clothed with rufous-brown, floccose tomentum; calyx-teeth in fruit slightly enlarged, ovate, obtuse, appressed to capsule.

SZECHUAN. In thin woods at 3300 m. above sea-level, *Wilson*, 3952.

A very interesting species belonging to a small group having shining, bullate or rugose leaves, represented heretofore in China by *R. bullatum*, Franch., and *R. deterisile*, Franch. The first-named is a native of western Yunnan and has ovate, very bullate leaves, and an enormous calyx. *R. deterisile* is a native of north-east Szechuan, and has shortly-stalked, verruculose leaves, subauriculate at the base, with a calyx intermediate between that of *R. bullatum* and that of *R. Wiltonii*.

Named in compliment to Mr. E. C. Wilton, C.M.G., of H.B.M.'s Chinese Consular Service, in 1900 Acting Consul at Ichang, as a mark of appreciation of numerous kind offices during that troublous year.—E. H. W.

Rhododendron strigillosum, Franch. in *Bull. Soc. Bot. France* xxxiii. 232.

SZECHUAN. *A. Henry*, 8872; *Pratt*, 311; *Wilson*, 3974.

Rhododendron auriculatum, Hemsl. in *Journ. Linn. Soc.* xxvi. 20.
HUPEH. A. Henry, 7562, 7725; Wilson, 1467.

Rhododendron adenopodum, Franch. in *Journ. de Bot.* ix. 391.
HUPEH. Wilson, 1161.

Rhododendron Fordii, Hemsl. in *Kew Bull.* 1894, 5.
KWANGTUNG. Ford.

Rhododendron formosanum, Hemsl. in *Kew Bull.* 1895, 183.
FORMOSA. A. Henry, 1976.

Rhododendron Przewalskii, Maxim. [in *Mel. Biol.* i. 771; Hemsl. in *Journ. Linn. Soc.* xxvi. 29. R. kialense, Franch. in *Journ. de Bot.* ix. 392.

SZECHUAN. Wilson, 3968.

Rhododendron Delavayi, Franch. in *Bull. Soc. Bot. France* xxxiii. 231; Hemsl. in *Journ. Linn. Soc.* xxvi. 22; *Bot. Mag.* t. 8137.

YUNNAN. Hancock, 158; A. Henry, 10,983, 10,983A, 11,330; G. Forrest, 4093.

II. *Leaves not lepidote; glabrous below.*

a Leaves usually broad at the base; sometimes cordate.

Rhododendron orbiculare, Decne in *Flore des Serres* xxii. (1877), 169.

SZECHUAN. Pratt, 325; A. Henry, 8873; Wilson, 3951.

Rhododendron Souliei, Franch. in *Journ. de Bot.* ix. 393.

SZECHUAN. Wilson, 3971.

Rhododendron chartophyllum, Franch. in *Journ. de Bot.* ix. 398.

YUNNAN. G. Forrest, 2030.

Rhododendron selense, Franch. in *Journ. de Bot.* xii. 257.

YUNNAN. Monbeig, 12.

Rhododendron Sheltonae, Hemsl. et E. H. Wils.; species ex affinitate *R. selensis*, a quo differt foliis subtus minus conspicue venosis pallidis, staminibus glabris et ovario styloque per totam longitudinem glanduloso.—W. B. H.

Bush, 1–2 m. high; branches short; bark grey and rough. *Leaves* elliptic-ovate, excluding petiole 6–8 cm. long, 3–4 cm. broad, apiculate, base oblique or rounded, glabrous, dull green above, very pallid below; petioles stout, 1.5–2 cm. long. *Buds* broadly ovoid, obtuse; scales short, broad, rounded, apiculate, ciliolate. *Flowers* eight or more, sub-umbellate, pink, 4–5.5 cm. across; pedicels 0.75–2 cm. long, spreading, sparsely glandular. *Calyx* annular, oblique, 7-toothed, glandular; teeth minute, unequal, ovate, acute, often with a tiny apical tuft of white hairs, ciliolately glandular. *Corolla* widely campanulate, narrowed to base, 7-lobed; lobes spreading, usually emarginate. *Stamens* 12 or more, included; filaments 1.5–2 cm. long, straight, glabrous. *Pistil* as long as corolla, glandular; ovary 6–8 mm. long; style slightly thickened above the middle. *Capsule* cylindric, 1.5–2 cm. long, 5 mm. broad, glandular.

SZECHUAN. Neighbourhood of Tatienlu, in open country at 2750–3000 m. above sea-level, Wilson, 3977.

A very neat species, common on scrub-clad mountains near Tatienu.

Named in compliment to Mrs. Shelton, wife of Dr. Shelton, Missionary at Tatienu, to both of whom I am indebted for kind hospitality during 1904.—E. H. W.

Rhododendron Fargesii, Franch. in *Journ. de Bot.* ix. 390.

HUPEH. *Wilson*, 1877. YUNNAN. *Wilson*, 3972.

Rhododendron decorum, Franch. in *Bull. Soc. Bot. France* xxxiii. 230; *Hemsl. in Journ. Linn. Soc.* xxvi. 22.

YUNNAN. *Hancock*, 157; *A. Henry*. 9155A; *G. Forrest*, 2119, 2253.

R. decorum belongs to a small group having large, corymbosely racemose flowers, and is closely allied to the eastern *R. Fortunei*, Lindl., differing in having white flowers with bearded filaments. Forrest describes the flowers as fragrant, white with green markings. Perhaps a variety of *R. Fortunei*, but in the absence of fuller material we do not venture to reduce it.

Rhododendron pachytrichum, Franch. in *Bull. Soc. Bot. France* xxxiii. 231.

SZETCHUAN. *Wilson*, 3976, 3976A.

Rhododendron maculiferum, Franch. in *Journ. de Bot.* ix. 393.

HUPEH. *Wilson*, 1878, 6949.

Rhododendron Fortunei, Lindl. in *Gard. Chron.*, 1859, 868; *Maxim. Rhod. As. Or.* 21; *Bot. Mag.* t. 5596; *Hemsl. in Journ. Linn. Soc.* xxvi. 23.

KIANGSI. *Bullock*. HUPEH. *A. Henry*, 5354; *Wilson*, 609.

Mr. Wilson was of opinion that his 609 represented a distinct species, but on further examination I am unable to accept this view. In the Index Kewensis the authorship of *R. Fortunei* is attributed, in square brackets, to T. Moore, but we have not found any evidence of the correctness of this record.

Mr. Consul Cooper collected *R. Fortunei* in 1884, on the Tientai Mountain, Chekiang, where, he notes, there were magnificent groves of it; Mr. T. L. Bullock collected it at Kiukiang, Kiangsi, in 1892. Writing of this species in the Gardeners' Chronicle, in 1859, Fortune states that *R. Championae*, Hook., was the only other species known, at that date, to inhabit China. It should be mentioned, however, that he did not include the species belonging to the section *Azalea*.

The specimens from Hupeh are rather more glandular than the eastern ones, and the leaves are mostly broadest above the middle.—W. B. H.

Rhododendron Hemsleyanum, E. H. Wils.; species distincta e grege *R. Fortunei*, Lindl., floribus grandibus, racemoso-corymbosis, ab omnibus speciebus hujus gregis foliis amplissimis basi alte auriculatis facile distinguitur.—W. B. H.

Bush, about 6 m. high; branches thick, glabrous. *Leaves* very coriaceous, oblong, excluding petioles 15–20 cm. long, 8–10 cm. broad, rounded, base deeply auricled, glabrous, dark shining green above, pallid below, primary and secondary veins prominent on both surfaces; petioles very thick, fleshy, 5 cm. long. *Flowers* ten or more in corymbose racemes, white, 6–8 cm. across; rachis thick,

reddish, about 7 cm. long, glandular and sparsely pilose; pedicels erect-spreading, 3-4 cm. long, pilose, with numerous, scattered gland-tipped hairs. *Calyx* nearly obsolete, annular. *Corolla* widely campanulate, narrowed to base, prominently veined, 7-lobed; lobes spreading, broad, rounded. *Stamens* 10, included; filaments slender, about 3 cm. long, very slightly dilated at base, glabrous; anthers oblong, 4-5 mm. long. *Pistil* overtopping stamens, clothed with shortly-stalked glands; style thickened and reddish above the middle; stigma very large, flattened. *Fruit* not seen.

SZECHUAN. Mount Omi, *Wilson*, 5138.

A remarkable, fine and distinct *Rhododendron* only met with on Mount Omi and very rare even there; not closely allied to any known species but nearest *R. auriculatum*, Hemsl., which has much more shortly auricled leaves more or less tomentose below, coarsely glandular-hairy petioles and a differently shaped corolla somewhat hairy outside. The only real points of agreement are the large flowers and auricled leaves in both species. *R. Hemsleyanum* is one of the most handsome and one of the largest growing of all Chinese *Rhododendrons*.—E. H. W.

Rhododendron Houlstonii, Hemsl. et E. H. Wils.; species ex affinitate *R. discoloris* et *R. Fortunei* a quibus differt foliis oblanceolato-oblongis basi cuneatis, pedicellis glabris et ovario apice glandulis longe stipitatis ornato.—W. B. H.

Bush, 1.5-4 m. high; branches stout, straight. *Leaves* oblong-obovate or oblong, excluding petioles 8-13 cm. long, 3-5 cm. broad, cuspidate; base more or less cuneate, rarely oblique; pallid below; midrib slightly immersed above, brownish and very prominent below; petioles stout, 1.5-3 cm. long. *Flowers* eight or more, in lax corymbose racemes, flesh-pink, 6-8 cm. across; rachis glaucescent; pedicels erect-spreading, 1.5-3 cm. long, more or less glandular. *Calyx* oblique, annular, obscurely toothed. *Corolla* widely campanulate, narrowed to base, 7-lobed, lobes erect-spreading, rounded or truncate. *Stamens* about 12, included; filaments unequal, 1.5-2.5 cm. long, slightly curved, glabrous. *Pistil* as long as corolla; ovary glandular in the lower, bearded in the upper, half; style stout, sparsely glandular, bearded near base. *Capsule* bluish-purple, cylindric, 2.5 cm. long, 7 mm. broad, rarely glandular.

WESTERN HUPEH. In woods, *Wilson*, 312, 2154 in part.

Named in compliment to Mr. G. Houlston, of the Chinese Imperial Maritime Customs Service, my companion on many a delightful ramble in the Ichang neighbourhood.—E. H. W.

Rhododendron Spooneri, Hemsl. et E. H. Wils.; ex affinitate *R. Fortunei* et forsan ejus varietas floribus minoribus, pedicellis crassis glabris et filamentis puberulis.—W. B. H.

Bush, 1-3 m. high; branches stout, straight. *Leaves* coriaceous, oblong-lanceolate or oblong, often broadest above the middle, excluding petioles 6-13 cm. long, 1.5-5.5 cm. broad, rounded, apiculate, base cuneate or sub-auricled, glaucous or very pallid below; petioles thick, 1-1.5 cm. long. *Flowers* ten or more, in lax corymbose racemes, white or pale pink, 5-7 cm. across; pedicels fleshy, erect-spreading or spreading, 2-4 cm. long, very glandular when young, speedily becoming quite glabrous; bracts oblong, 2-2.5 cm. long, clothed with white, silky, appressed hairs on both

surfaces. *Calyx* oblique, saucer-shaped, glabrous. *Corolla* widely campanulate, much narrowed to base, 7-lobed; lobes rounded or truncate. *Stamens* about 16, included; filaments 2-2.5 cm. long, sparsely glandular and villous in the lower half. *Pistil* equalling corolla, clothed with scattered, shortly-stalked glands; style stout, cylindric; stigma large. *Capsule* 4 cm. long, 1.5 cm. broad furrowed, slightly curved, brownish-purple.

SZECHUAN. Neighbourhood of Tatienlu, on scrub-clad mountains 2650-3650 m. above sea-level, *Wilson*, 3975. YUNNAN. Tsekou, *Monbeig*.

Père Monbeig's specimens have the leaves broader and subauricled at the base, less glaucous below; the corolla-tube slightly hairy inside and the filaments more or less villous. In spite of these slight differences there can scarcely be any question as to their being conspecific with those from Yunnan.

Named in compliment to my friend Mr. H. Spooner, who very largely assisted in making up my collections into sets for disposal to different herbaria.—E. H. W.

β Leaves narrowed towards the base.

Rhododendron Vialii, *Franch.* in *Journ. de Bot.* ix. 398.

YUNNAN. *A. Henry*, 11,563A, 13,271.

Rhododendron brevistylum, *Franch.* in *Journ. de Bot.* xii. 261.

YUNNAN. *G. Forrest*, 4162.

Rhododendron hypoglaucum, *Hemsl.* in *Journ. Linn. Soc.* xxvi. 25.

SZECHUAN. *Wilson*, 5137. HUPEH. *Wilson*, 311.

Rhododendron neriiflorum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 230; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 28.

YUNNAN. *G. Forrest*, 4144, 4164.

Rhododendron argyrophyllum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 231.

SZECHUAN. *Wilson*, 3962, 3963, 3966, 5137A.

Wilson's 3966 differs from the other specimens in having glabrous filaments, and his 3962A, which must also be referred to this species, has much less hairy filaments and otherwise differs slightly from the type.

Rhododendron Ririei, *Hemsl. et E. H. Wils.*; species distincta equanosa, ramis elongatis viridibus, foliis sparsis supra viridibus opacis subtus pallidioribus et floribus racemosis.—W. B. H.

Bush, about 6 m. high; branches long, straight, with greyish-green bark when young. *Leaves* scattered, lanceolate or oblong-lanceolate, very rarely broadest above the middle, excluding petiole 10-15 cm. long, 3-5.5 cm. broad, shortly acuminate, base narrowed, cuneate, pale green glabrous above, grey below, midrib slightly immersed above, prominent below; petioles 1.5-2 cm. long, glabrous. *Buds* ovoid, acute; scales broadly-ovate, some ciliate, lower acute, upper rounded. *Flowers* about ten in short corymbose racemes, white, about 5 cm. across; pedicels spreading, very stout, 1.5-2 cm. long, sparsely pubescent. *Calyx* oblique, annular, obscurely 5-toothed. *Corolla* widely campanulate, 5-lobed; lobes erect-spreading, broad. *Stamens* included; filaments filiform, glabrous? *Pistil* reaching to corolla-mouth; ovary about 1 cm. long, densely clothed with short grey felt; style very stout,

cylindric, reddish. *Capsule* large, cylindric, about 3 cm. long, 1 cm. broad, with shallow channels, greyish.

SZECHUAN. Mount Omi, *Wilson*, 5139.

Our material consists of two sheets; one with one old flower and very young fruit; the other with ripe fruit. The very large fruits afford a marked distinction from other members of the group to which this belongs, and in consequence we do not hesitate to describe it.

Named in compliment to the Rev. B. Ririe, of the China Inland Mission, Kiating, Western Szechuan, who rendered me considerable assistance during my second journey in China.—E. H. W.

Rhododendron discolor, *Franch.* in *Journ. de Bot.* ix. 391.

SZECHUAN. *Wilson*, 1077. HUPEH. *Wilson*, 1077.

Rhododendron calophytum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 230.

SZECHUAN. *Wilson*, 3979.

Rhododendron sutchuenense, *Franch.* in *Journ. de Bot.* ix. 392.

WESTERN HUPEH. *Wilson*, 17, 2537, 5285, 6914.

Rhododendron Watsonii, *Hemsl. et E. H. Wils.*; species *R. sutchuenensi* simillima differt imprimis foliis subsessilibus, floribus minoribus longius pedicellatis et fructu minore curvato.—W. B. H.

Bush, 2·6 m. high; branches very thick, glabrous. *Leaves* clustered at ends of shoots, very shortly petiolate, obovate or oblong-obovate, excluding petiole 15–20 cm. long, 5–7 cm. broad, shortly acuminate, base narrowed to petiole, dark green, glabrous, somewhat wrinkled above, clothed with short, dense, grey felt beneath; midrib very large and broad, channelled above, very much raised below, secondary veins prominent on both surfaces; petioles thick, broad, winged, 0·5–1 cm. long. *Buds* globose; scales short, orbicular, concave, slightly pubescent on inner surface. *Flowers* twelve or more in short corymbose racemes, white with red blotch, 4–5 cm. across; rachis short, very thick, sparsely pubescent; pedicels spreading or erect-spreading, 2–3·5 cm. long, glabrous or nearly so. *Calyx* oblique, annular, 7-toothed; teeth unequal, largest 1–2 mm. long, ovate, acute or rounded. *Corolla* short, broadly campanulate, 7-lobed, glabrous; lobes elliptic, more or less spreading, rounded or emarginate. *Stamens* about 14, included; filaments unequal in length, 2–3 cm. long, sparsely pubescent in lower half. *Pistil* equalling in length the longest stamens, ovary about 8 mm. long, slightly puberulous, furrowed; stigma small, flattened. *Capsule* cylindric, often curved, about 3 cm. long, 8–10 mm. broad, woody.

SZECHUAN. In thin coniferous forests, at 3300–3800 m. above sea-level, *Wilson*, 3964.

Named in compliment to my friend and travelling companion, Mr. W. C. Haines-Watson, of the Chinese Imperial Maritime Customs Service.—E. H. W.

Rhododendron irroratum, *Franch.* in *Bull. Soc. Bot. France* xxxiv. 280; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 26; *Bot. Mag.* t. 7371.

YUNNAN. *A. Henry*, 10,275, 10,301, 10,853, 11,066, 11,067, 11,067B; *W. Hancock*, 179; *G. Forrest*, 2043, 2058, 4146; *Monbeig*, 4.

Dr. A. Henry's 10,853 from Yunnan and Père T. Monbeig's n. 4, from the same province, differ from typical *R. irroratum* in the filaments and ovary being glabrous or nearly so.

Rhododendron insigne, Hemsl. et E. H. Wils. ; inter species affines *R. irrorato* proximum et simillimum, ab eo tamen differt foliis sparsis margine haud undulatis et floribus distincte racemosis longe pedicellatis.—W. B. H.

Bush, 1·6 m. high ; branches thick, straight. *Leaves* very coriaceous, often sub-opposite, lanceolate-oblong, very rarely broadest above the middle, excluding petiole 9–13 cm. long, 3–5 cm. broad, shortly acuminate, base cuneate, margins reflexed, shining green above, uniformly clothed with dense, short, grey felt below ; midrib immersed above, raised below, secondary veins prominent on both surfaces ; petioles thick, 1–2 cm. long, flattened above. *Bud-scales* oblong or oblong-spathulate, 1·5–3 cm. long, acuminate, fleshy, brown, lowest filiform, flattened at base, upper ciliolate, more or less pubescent on inner surface. *Flowers* eight or more, in short lax corymbose racemes, pale or deep pink, 3–5 cm. across, bracteate ; bracts oblong-lanceolate or oblong, lowest filiform, 1·5–2 cm. long, 7–10 mm. broad, fleshy, brown, tomentose without, often pubescent within ; pedicels spreading or erect-spreading, 2–4 cm. long, reddish, sparsely pubescent. *Calyx* annular, sometimes truncately 5-toothed ; teeth short, broad, rounded, pubescent. *Corolla* wide campanulate, 5-lobed : lobes erect-spreading, rounded or emarginate. *Stamens* 14 or more, included ; filaments 1·5–2·5 cm. long, villous in lower half. *Pistil* equal to the corolla in length ; ovary 6–8 mm. long, densely clothed with a white velvety pubescence ; style stout, glabrous, reddish ; stigma dark-coloured, flattened. *Fruit* not seen.

SZECHUAN. Mount Wa, at 2300–3000 m. above sea-level, Wilson, 3965 ; Pratt, 349 ; A. Henry, 8859.

An exceedingly distinct and very striking species, only known from Mount Wa. Neither Pratt's nor Henry's specimens are localised, but I happen to know that they were collected in the same place as my own.—E. H. W.

Rhododendron Davidii, Franch. in Bull. Soc. Bot. France xxxiii. 230. *R. oreodoxa*, Franch., l. c. ?

SZECHUAN. Wilson, 3978.

Specimens in the Kew Herbarium, received from Paris, and bearing the above names, are indistinguishable.

III.—*Leaves lepidote.*

Rhododendron cilicalyx, Franch. in Bull. Soc. Bot. France xxxiii. 233 ; Hemsl. in Journ. Linn. Soc. xxvi. 21.

YUNNAN. A. Henry, 10,524, 11,983, 11,983A.

Rhododendron excellens, Hemsl. et E. H. Wils. ; species *R. Dalhousiae* similis, differt calycis lobis latioribus distincte venosis, corolla extra lepidota et staminibus dimidio brevioribus.—W. B. H.

Bush, 3 m. high (Henry) ; branches stout, brown, lepidote. *Leaves* scattered, oblong, excluding petiole 15–18 cm. long, 5·5–6 cm.

broad, rounded or obtuse, apiculate, base somewhat narrowed, oblique, glabrous, very strongly veined, dark green, slightly wrinkled above, glaucous and lepidote beneath; midrib very much raised below; secondary veins immersed above, very prominent beneath; petioles very stout, nearly cylindric, 2·5–3·5 cm. long. *Flowers* three or more, umbellate, white (*Henry*), 10 cm. long, 8 cm. broad; pedicels stout, 2 cm. long, erect, lepidote. *Calyx* petaloid, glabrous, deeply 5-lobed; tube saucer-shaped, 1·4 mm. deep, lepidote outside: lobes orbicular, 6–9 mm. long, rounded, very sparingly ciliolate. *Corolla* deeply campanulate, 5-lobed, lepidote outside; tube 7·5–8 cm. long; lobes 2–2·5 cm. long, broad, erect-spreading, rounded or truncate. *Stamens* about 12, half the length of the corolla; filaments 4–5 cm. long, flattened and pubescent in the lower half; anthers oblong, 10–12 mm. long. *Pistil* reaching to mouth of corolla; ovary about 1·5 cm. long, tapering to style, densely lepidote; style stout, cylindric, lepidote in lower half; stigma large, flattened, dark-coloured. *Fruit* not seen.

YUNNAN. South of the Red River from Mengtze, *A. Henry*, 13,666.

Undoubtedly the grandest of the Chinese *Rhododendrons* and comparable only with the Indian *R. Dalhousiae*, its nearest ally, from which it is easily distinguished by its more strongly veined and larger leaves, its different calyx, lepidote corolla, and stamens half the length of the corolla-tube. *Henry* remarks that only one specimen was brought in by a native collector.

This species is undoubtedly a native of moist warm-temperate forests, and with *R. Falconeri* forms a strong connecting link with the sub-Himalayan types of Sikkim and Assam. In view of the remarkably local distribution of most of the Chinese and Himalayan *Rhododendrons*, it is very surprising to find species so evidently and closely allied, separated by some fifteen degrees of longitude and by several stupendous mountain ranges.—E. H. W.

Rhododendron lutescens, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 235.

SZETCHUAN. *Wilson*, 3939.

Rhododendron Augustinii, *Hemsl.* in *Journ. Linn. Soc.* xxvi. 19.

HUPEH. *Wilson*, 302. SZETCHUAN, *Wilson*, 3950.

The Szechuan specimens, from an altitude of about 3000 m., have smaller leaves, and the under surface of the midrib is glabrous.

Rhododendron Harrovianum, *Hemsl.* in *Gard. Chron.* 1910, xlvii. 4; *Bot. Mag.* t. 8309.

SZETCHUAN. *Wilson*, 1433, 3942 partly.

Cultivated specimens of this species were received from Messrs. James Veitch & Sons, bearing the number 3942, but *Wilson's* dried specimens bearing this number are different.—W. B. H.

Rhododendron lepidotum, *Wall.* *Cat.* n. 758; *Royle Illustr. Him. Pl.* 260, t. 64, f. 1; *Bot. Mag.* tt. 4657, 4802 et 6450, *fide* C. B. Clarke in *Fl. Brit. Ind.* iii. 471.

YUNNAN. *G. Forrest*, 2505,

Rhododendron heliolepis, Franch. in *Bull. Soc. Bot. France* xxxiv. 283 ; *Hemsl. in Journ. Linn. Soc.* xxvi. 24.

YUNNAN. *Monbeig*, 6, 11.

Rhododendron sulfureum, Franch. in *Bull. Soc. Bot. France* xxxiv. 283 ; *Hemsl. in Journ. Linn. Soc.* xxvi. 31.

SZECHUAN. *Wilson*, 4143.

Rhododendron Hanceanum, *Hemsl. in Journ. Linn. Soc.* xxvi. 24.

SZECHUAN. *Wilson*, 5141.

Rhododendron yunnanense, Franch. in *Bull. Soc. Bot. France* xxxiii. 232 ; *Bot. Mag.* t. 7614.

YUNNAN. *Wilson*.

Rhododendron Benthamianum, *Hemsl. in Kew Bull.* 1907, 319 (excl. 3940 et 3942, *Wilson*) ; *Gard. Chron.* 1910, xlvii. 4.

SZECHUAN. *Wilson*, 1766, 1878, 1969.

By an oversight *Wilson*'s 3940 and 3942 (= *R. concinnum*, *Hemsl.*) were cited under the first description, and in consequence of a lapse of memory the species was described again in the *Gardeners' Chronicle*.—W. B. H.

Rhododendron polylepis, Franch. in *Bull. Soc. Bot. France* xxxiii. 232.

SZECHUAN. *Wilson*, 3941, 3949.

Rhododendron concinnum, *Hemsl. in Journ. Linn. Soc.* xxvi. 21. *R. yanthinum*, *Bur. et Franch. in Journ. de Bot.* v. 94.

SZECHUAN. *A. Henry*, 8874 ; *Pratt*, 326, 848 ; *Wilson* 3940, 3940A, 3942 mainly.

This species was founded on an imperfect specimen collected by the Rev. Ernest Faber on the summit of Mount Omi ; but there is now ample material at Kew under the above numbers. *Pratt*'s 848 and *Wilson*'s 3940A differ from the type in having leaves 4 to 8 cm. long. Messrs. James Veitch & Sons sent cultivated specimens of the typical form to Kew in May, 1909, under the number 1524.

Rhododendron coombense, *Hemsl. in Bot. Mag.* t. 8280.

SZECHUAN. *Wilson*, 1524.

Rhododendron rigidum, Franch. in *Bull. Soc. Bot. France* xxxiii. 233 ; *Hemsl. in Journ. Linn. Soc.* xxvi. 29.

SZECHUAN. *Wilson*, 3947.

Rhododendron rubiginosum, Franch. in *Bull. Soc. Bot. France* xxxiv. 282 ; *Hemsl. in Journ. Linn. Soc.* xxvi. 30.

YUNNAN. *G. Forrest*, 2050, 2097.

Rhododendron siderophyllum, Franch. in *Journ. de Bot.* xii. 262.

YUNNAN. *A. Henry*, 9110A ; *Wilson*, 3950 ; *G. Forrest*, 507.

Rhododendron moupinense, Franch. in *Bull. Soc. Bot. France* xxxiii. 233.

SZECHUAN. *Wilson*, 3937.

Rhododendron dendrocharis, Franch. in *Bull. Soc. Bot. France* xxxiii. 233.

SZECHUAN. *A. Henry*, 8857 ; *Pratt*, 396 ; *Wilson*, 3938.

CHONIASTRUM.

Rhododendron Hancockii, Hemsl. in *Kew Bull.* 1895, 107; *Hook. Ic. Pl.* t. 2381.

YUNNAN. *A. Henry*, 10,523A, 10,523B.

Rhododendron stamineum, Franch. in *Bull. Soc. Bot. France* xxxiii. 236; Hemsl. in *Journ. Linn. Soc.* xxvi. 30. *R. pittosporifolium*, Hemsl. in *Journ. Linn. Soc.* xxvi. 29. *R. aucubifolium*, Hemsl. in *Journ. Linn. Soc.* xxvi. 19, quoad flores; folia *Daphniphylli macropodi*!

HUPEH. *A. Henry*, 5787, 6432; *Wilson*, 758, 5140.

Rhododendron oxyphyllum, Franch. in *Journ. de Bot.* xii. 264.

YUNNAN. *A. Henry*, 259, 331, 11,609.

This is very closely allied to, if not the same as, *R. Westlandii*, Hemsl.

Rhododendron Wilsonae, Hemsl. et E. H. Wils.; species *R. Westlandii* simillima, differt imprimis bracteis floriferis angustis acutis.—W. B. H.

Bush, 1–2 m. high; branches slender, straight, greyish, glabrous. *Leaves* pseudo-verticillate, ovate-lanceolate, excluding petioles 7–10 cm. long, 2–4 cm. broad, glabrous, acuminate, base more or less cuneate, shining green, reticulate above, pallid beneath; secondary veins prominent on both surfaces; petioles about 1 cm. long. *Buds* elongate-acuminate; scales reddish-brown, scarious, ovate to oblong, largest about 2 cm. long, acute. *Flowers* solitary on each scaly peduncle; peduncles clustered, forming fascicles of 4 or more at ends of shoots, flesh-pink, 4–6 cm. across; the peduncles enclosed by sheathing bud-scales, erect-spreading, about 2 cm. long, glabrous. *Calyx* annular, truncately 5-toothed, glabrous; teeth unequal, short, rounded or acuminate. *Corolla* deeply 5-lobed; tube narrowly funnel-shaped, about 1 cm. long; lobes nearly three times as long as the tube, erect-spreading, elliptic, rounded. *Stamens* about ten, as long as corolla-lobes; filaments unequal, longest 3.5 cm. long, curved, slightly villous in the lower half; anthers nearly globular. *Pistil* just over-topping the stamens; ovary slender, about 7 mm. long, glabrous, shining, reddish-brown; style curved upwards, glabrous; stigma capitate, flattened. *Capsule* cylindric, about 3 cm. long, 0.5 cm. broad, deeply furrowed, brown.

HUPEH. In woods at 1700–2000 m. above sea-level, *Wilson*, 317.

One of the most beautiful and distinct of Chinese *Rhododendrons*. Named in compliment to my wife.—E. H. W.

Rhododendron Tutcherae, Hemsl. et E. H. Wils.; inter species sectionis '*Choniastrum*' staminibus inclusis ob ramulos floriferos et folia setulosa distinctum.—W. B. H.

Tree, 13 m. high (*Henry*); branches straight, setose until two years old; bark grey. *Leaves* clustered at ends of shoots, subcoriaceous, lanceolate, excluding petiole 8–11 cm. long, 1.5–3 cm. broad, acuminate, base cuneate, glabrous above, setulose beneath, midrib impressed above, very prominent beneath, secondary veins raised on both surfaces; petioles about 1 cm. long, setose. *Flowers* in axillary fascicles of three or more, clustered in such a way as to form a terminal truss of 12 or more flowers, violet (*Henry*), 5 cm.

across ; pedicels erect-spreading, about 1·5 cm. long, reddish, very sparsely setose. *Calyx* minute, truncately 5-toothed, glandular ; teeth often unequal, very short, acute. *Corolla* deeply 5-lobed ; tube about 1 cm. long, narrow, nearly cylindric ; lobes three times as long as tube, spreading, elliptic, obtuse, more rarely rounded, usually with tiny apical tufts of white hairs. *Stamens* about ten, exerted but shorter than corolla-lobes ; filaments tomentose in lower half. *Pistil* over-topping stamens ; ovary slender, 0·5 cm. long, clothed with short, white, appressed hairs ; style reddish, glabrous ; stigma large, dark-coloured. *Fruit* not seen.

YUNNAN. Mountains south of Mengtze, in forests at 2000 m., *A. Henry*, 10,636.

Named in compliment to the wife of my friend Mr. W. J. Tutchet, of Hongkong, to whom I am indebted for assistance and kind hospitality during my several visits to the island.

The section *Choniastrum*, Franch., in which the flowers arise either singly or in fascicles from the axils of the uppermost leaves, instead of being strictly terminal, also includes *R. Henryi*, Hance, and *R. Westlandii*, Hemsl. All the species have very beautiful flowers.—E. H. W.

OSMOTHAMNUS.

Rhododendron micranthum, Turcz. in *Bull. Soc. Nat. Mosc.* 1837, n. vii., 155 ; Hemsl. in *Journ. Linn. Soc.* xxvi. 27 ; *Bot. Mag.* t. 8198.

HUPEH. *A. Henry*, 6632 ; *Wilson*, 1526.

Rhododendron rufescens, Franch. in *Journ. de Bot.* ix., 397.

SZECHUAN. *Wilson*, 3930, 3931. YUNNAN. *G. Forrest*, 2182.

Rhododendron fastigiatum, Franch. in *Bull. Soc. Bot. France* xxxiii. 234 ; Hemsl. in *Journ. Linn. Soc.* xxvi. 23.

SZECHUAN. *Pratt*, 267 ; *Wilson*, 3936, 3936A.

Rhododendron flavidum, Franch. in *Journ. de Bot.* ix. 395. *R. primulinum*, Hemsl. in *Gard. Chron.* xlvii. (1910), 4.

SZECHUAN. *Pratt*, 521 ; *Wilson*, 1773, 3932.

Cultivated specimens, which have recently flowered with Messrs. James Veitch & Sons at Coombe Wood, prove that *R. primulinum*, Hemsl., is not a distinct species.

Rhododendron Wongii, Hemsl. et E. H. Wils. ; ab *R. flavido* foliis majoribus, floribus majoribus eburneis, et calyce parvo haud petaloideo recedit : *R. concinno* etiam simile sed foliis minoribus apice rotundatis, florum colore et corolla intus extraque glabra differt.—W. B. H.

Bush, 1-2 m. high ; branches twiggy, lepidote when young. *Leaves* elliptic or ovate-elliptic, excluding petiole 2-3 cm. long, 1-1·5 cm. broad, apiculate, very dark shining green, lepidote above, grey, lepidote beneath ; petioles 3-4 mm. long, lepidote. *Buds* ovoid, acute ; scales obovate or spathulate, concave, rounded, apiculate, ciliate. *Flowers* in fascicles of three or more, cream-coloured, about 3 cm. across ; pedicels slender, erect-spreading, 8-10 mm. long, lepidote. *Calyx* saucer-shaped, lepidote, 5-toothed ; teeth

about 1 mm. long, orbicular, ciliate. *Corolla* deeply 5-lobed; tube funnel-shaped, about 1 cm. long, pubescent inside; lobes elliptic, about 1.5 cm. long, spreading, rounded. *Stamens* about ten, shortly exserted; filaments unequal, 1.5-2 cm. long, villous in lower half. *Pistil* longer than stamens; ovary about 3 mm. long, furrowed, densely lepidote; style filiform, sparsely pubescent at base, slightly thickened below stigma. *Fruit* not seen.

SZECHUAN. Neighbourhood of Tatienlu, on scrub-clad mountain sides, at 3650 m. above sea-level, *Wilson*, 3948.

Named in compliment to Mr. Y. C. Wong, of Ichang, Central China, a cultured Chinese gentleman, who rendered me signal services during the whole of my stay in China.—E. H. W.

Rhododendron polycladum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 234; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 29.

SZECHUAN. *Wilson*, 3935B. YUNNAN. *G. Forrest*, 4149.

Rhododendron blepharocalyx, *Franch.* in *Journ. de Bot.* ix. 396.

SZECHUAN. *Pratt*, 254; *Wilson*, 3929.

Rhododendron fragrans, *Maxim. Rhod. As. Or.* 16; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 23.

SZECHUAN. *Pratt*, 660.

Rhododendron polifolium, *Franch.* in *Journ. de Bot.* ix. 397.

SZECHUAN. *Pratt*, 787.

Rhododendron trichostomum, *Franch.* in *Journ. de Bot.* ix. 396.

SZECHUAN. *Wilson*, 3933.

Rhododendron intricatum, *Franch.* in *Journ. de Bot.* ix. 395; *Hemsl.* in *Gard. Chron.* 1907, xli. 262, f. iii.; *Bot. Mag.* t. 8163.

SZECHUAN. *Wilson*, 3934.

Rhododendron nigro-punctatum, *Bur. et Franch.* in *Journ. de Bot.* v. 95.

SZECHUAN. *Faber*, 483; *A. Henry*, 8897; *Pratt*, 802; *Wilson*, 3935, 3935A.

GRAVEOLENTES.

Rhododendron brachyanthum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 234; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 20.

YUNNAN. *Monbeig*, 9.

Rhododendron emarginatum, *Hemsl. et E. H. Wils.*: species distincta fruticosa valde ramosa, ramis gracilibus, foliis parvis subverticillatis obovatis emarginatis simul apiculatis, floribus solitariis (an semper?) graciliter pedicellatis.—W. B. H.

Bush, 60 cm. high (*Henry*): branches spreading (*Henry*), ? prostrate, twiggy, verruculose. *Leaves* pseudo-verticillate, obovate, excluding petioles 3-4 cm. long, 1.5-2 cm. broad, rounded, emarginate, mucronulate, base narrowed to the petiole; upper surface dark green, sparsely lepidote when young; lower surface pallid, lepidote; midrib and secondary veins immersed above, very prominent beneath; petioles 3-5 mm. long, lepidote. *Buds* ovoid, acute; scales ovate, acute, ciliolate, very sparsely lepidote. *Flowers* solitary or in pairs (always?), yellow (*Henry*), about 1 cm. across; pedicels erect, 2 cm. long, lepidote. *Calyx* annular, 5-toothed;

teeth minute, unequal, obtuse. *Corolla* campanulate, 5-lobed, lepidote outside: lobes short, spreading, rounded. *Stamens* ten, included: filaments broad, about 5 mm. long, villous about the middle, glabrous at base. *Pistil* over-topping stamens: ovary 2 mm. long, furrowed, densely lepidote. *Fruit* not seen.

YUNNAN. Mountains south-west of Mengtze, at 2000 m. above sea-level, *A. Henry*, 9166.

Very distinct from all other Chinese species. From the material before us we think the species may be prostrate in habit.—E. H. W.

Rhododendron Mariesii, *Hemsl. et E. H. Wils.* in *Kew Bull.* 1907, 244; *Bot. Mag.* t. 8206.

KIANGSI. *Maries.* HUPEH. *A. Henry*, 5274.

Rhododendron mekongense, *Franch.* in *Journ. de Bot.* xii. 263.

YUNNAN. *Monbeig*, 7; *G. Forrest*, 698.

TSUSIA.

Rhododendron villosum, *Hemsl. et E. H. Wils.*: species distinctissima, etsi *R. Championae* adspectu simillima, ab eo foliis floribusque lepidotis, pilis omnibus eglandulosis, floribus minoribus et calyce parvo diversa.—W. B. H.

Bush, 1-6 m. high, much-branched, branches twiggy, sparsely lepidote, densely setose when young, becoming glabrescent with age. *Leaves* clustered at ends of shoots, lanceolate or oblong-lanceolate, excluding petiole 4.5-11 cm. (usually 7-9 cm.) long, 2-3.5 cm. broad, short or long acuminate, apiculate, base slightly auricled or cuneate, usually setulose on both surfaces (rarely pubescent beneath), becoming glabrescent with age; sparsely lepidote above, more densely so beneath: midrib slightly immersed above, very prominent and villous beneath; secondary veins raised on upper surface; petioles 5-8 mm. long, villous. *Buds* ovoid; scales short, orbicular, apiculate, sometimes ciliolate. *Flowers* three or more, subumbellate, light to dark-purple, 3.5-4.5 cm. across: pedicels erect-spreading, 1-1.5 cm. long, pilose. *Calyx* saucer-shaped, 5-toothed, densely villous; teeth short, sub-orbicular, rounded, ciliate, reddish. *Corolla* deeply 5-lobed, sparsely lepidote; tube narrow, funnel-shaped, 1.5-2.5 cm. long, more or less villous outside; lobes about as long as tube, spreading, elliptic, rounded or obtuse. *Stamens* about twelve, shortly exserted; filaments slender, 2-3.5 cm. long, densely pilose below middle but glabrous at base. *Pistil* over-topping stamens; ovary narrow, 4-7 mm. long, densely lepidote; style filiform, glabrous, very rarely sparsely lepidote. *Capsule* cylindric, lepidote, sparsely setulose, about 2 cm. long, .5 cm. across, furrowed.

SZECHUAN. In thickets and thin woods, at 2300-3650 m. above sea-level, *Wilson*, 3944, 3945, 3946.

The three numbers were gathered in different localities at varying altitudes; they differ somewhat in size of leaves and in degree of hairiness of leaves and shoots.—E. H. W.

Rhododendron indicum, *Sweet, Brit. Fl. Gard.* ser. 2, t. 128; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 25.—*Azalea indica*, *Linn. Sp. Pl.* ed. 1, 150.

SZECHUAN. *Wilson*, 5143. YUNNAN. *A. Henry*, 9900E.

Rhododendron microphyton, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 235; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 28.

YUNNAN. *A. Henry*, 12,983; *G. Forrest*, 4172.

KEYSIA.

Rhododendron spinuliferum, *Franch.* in *Journ. de Bot.* ix. 399.

YUNNAN. *A. Henry*, 10,572, 10,619.

This species was founded on Delavay's n. 4883, which is in the Kew Herbarium under another, unpublished, name. It has recently flowered in the collection of Mr. M. L. de Vilmorin, at des Barres.

RHODORASTRUM.

Rhododendron oleifolium, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 235; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 28.

YUNNAN. *G. Forrest*, 4132, 4133, 4170.

Rhododendron racemosum, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 235; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 29; *Bot. Mag.* t. 7301.

YUNNAN. *G. Forrest*, 2009, 2207, 4134.

Rhododendron spiciferum, *Franch.* in *Journ. de Bot.* ix. 400.

YUNNAN. *A. Henry*, 9369, 9369A; *G. Forrest*, 512.

Rhododendron scabrifolium, *Franch.* in *Bull. Soc. Bot. France* xxxiii. 236; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 30; *Bot. Mag.* t. 7159.

YUNNAN. *Hancock*, 154.

AZALEASTRUM.

Rhododendron ovatum, *Planch.* ex *Maxim.* *Rhod. As. Or.* 45; *Hemsl.* in *Journ. Linn. Soc.* xxvi. 28.—*Azalea ovata*, *Lindl.* in *Journ. Hort. Soc. Lond.* i. 149; ii. 126, t. 2; *Bot. Mag.* t. 5064.

HUPEH. *Wilson*, 719.

XVII.—AN ATTEMPT TO INTRODUCE OLEARIA SEMIDENTATA INTO THE BRITISH ISLES.

(With Plates.)

A. A. DORRIEN-SMITH.

Captain A. A. Dorrien-Smith, who has just returned from an expedition to Western Australia, New Zealand, and Chatham Island, has sent the following account of his experiences in Chatham Island for publication in the *Kew Bulletin*. Captain Dorrien-Smith has brought home to the Scilly Islands a large number of interesting plants, but he informs us that, owing to the heat experienced on the voyage from Monte Video to lat. 10° N., the Chatham Island plants suffered severely and only a very small proportion managed to survive.

"I left Lyttelton, New Zealand, on Dec. 1st, 1909, at 10 p.m. in a small steamer capable of steaming about 9 knots under very favourable circumstances, in order to cover the 476 knots of Southern Pacific Ocean which separates the Chatham Islands from the mainland. Our course lay about E. by N., and from the very start we met a strong head wind which lasted more or less the whole way across, but, after a good bucketing lasting 3 days 12 hours, we at last sighted through the mist some land rising sheer out of the sea and arrived soon afterward in the Port of Waitangi. It was a dull, thick, misty day when we arrived and it soon turned into deluges of rain. As we approached the small wharf and let go the anchor in three and a half fathoms of water, just outside the kelp and within a biscuit-throw of the cliff, I noticed that we had steamed into a very large bay surrounded by sand dunes. At first the place seemed deserted; but presently people began to arrive, a few on foot but most on horseback, and as far as the eye could see came knots of cantering horsemen along the beach accompanied by a swarm of dogs, each man or woman seemed to have at least six, until at last there must have been 60 or 70 horses and about 300 dogs all collected on the beach to await the landing of the mails, &c.

"Capt. Allsop, who commanded our vessel, and who had been most kind to me on the voyage across, kindly introduced me on landing to the inhabitants of the place. Everywhere I was most hospitably received and everyone was anxious to learn my mission and what they could do for me, a point which I was not long in explaining; so having secured a room at Mr. Odman's hotel on the beach (there are two hotels) I was directed to Mr. F. A. D. Cox's house some two miles off and kindly lent a horse to get there. I had been in communication with Mr. Cox for some years, through the kindness of Dr. L. Cockayne and others, and as he is the living authority on the Chatham Island flora I was most anxious to meet him. After fording the Waitangi river at its mouth and then crossing the sand dunes, my way lay across a fine grass flat, which comprises the race course, and beyond this, on some rising ground a short distance further, I came to the house, Whangamarino, where I was most hospitably received and where I eventually stayed for the remainder of my visit to the islands.

"The Chatham Islands are composed of two large islands and several rocks and islets. Chatham Island itself is by far the largest, with an area of about of 230,000 acres or about 30 miles long, and Pitt Island of about 15,000 acres; they lie on either side of 44° S. lat., some small islands of the group being known as the Forty-fours. They were inhabited in the early days of European settlement in New Zealand by the Moriori, a peaceful black race practically unversed in the art of war, until the Maoris came and ate them. I believe only nine remain at the present day.

"Dr. L. Cockayne in the *Trans. N. Z. Inst.*, vol. xxxiv, gives a very good account of these islands and special reference should be made to his paper for an account of their flora.

"I found during my visit that the climate is particularly 'soft,' indeed, from the statistics collected by Messrs. Cox and Shand, the average rainfall seems only to be about 30 inches, while it 'damps' on an average, 190 days in the year. The temperature is very

mild, a degree or so of frost only being registered in the winter months, and, on the whole, I should say that the climate is very similar to that of the south-west coast of Ireland. The islands are of volcanic origin; Chatham Island itself is made up of two large masses of land joined together by a narrow isthmus composed of limestone. Blown sand forms an important physical feature of the island and, to some extent, has caused in it also the formation of a huge inland lagoon some 40,000 acres in extent, by cutting off a large area of shallow sea. Close to this lagoon there is a large freshwater lake, Lake Huro, which drains the country bordering the great lagoon to the south, and has a swampy outlet to the south into the Weitangei river, and there are several other freshwater lakes. The south end of the island contains the larger mass of land and rises to nearly a thousand feet above sea-level in a succession of peaty, boggy undulations: the higher one ascends the worse the bogs become. The slopes adjacent to the sea-coast, therefore, are the only parts under pasturage, and what there is of it is excellent, and probably as fertile as that in any part of New Zealand itself.

"But to return to the day of my arrival in the island; being more or less wet through after my ride to Mr. Cox's house, and as it was still pouring with rain, I took the opportunity to visit the swamp on the shore of Lake Huro, which is adjacent to the house. In the wettest part I found only various forms of swamp plants such as *Leptocarpus simplex* and *Carex appressa* var. *sectoides*, with here and there *Phormium tenax*; but as soon as the swamp became the least bit drier one came upon the lowland forest, first *Coprosma propinqua*, then *Suttonia Corii*, with more flax, and *Arundo conspicua*, while further in one found plenty of *Olearia Traversii*, *Pseudopanax chathamicum*, *Coprosma chathamica* and *Suttonia chathamica*; *Dra-cophyllum arboreum* also occurs, and a very fine *Astelia*, which Mr. Cheeseman refers to as *A. nervosa*; I picked some leaves of this as much as 8 feet long, and gathered living specimens of the various species of *Carex* for Dr. Cockayne. On the edge of this swamp I saw my first 'Routine' (*Senecio Huntii*); this is a fine plant resembling in its mature state *Senecio Stewartiae* of the Snares Islands, but differing considerably in its juvenile form. I returned to the hotel for the night, having completed my ducking in the swamp, and arranged to examine the forest at the back of Whangamarino with Mr. Cox on the following day. On joining Mr. Cox at his house I found that there had been 75 parts of rain and it was still damping. About 11 o'clock it eased off, and we started on horseback to the back of the run, to collect some small plants of *Senecio Huntii*; this we did without much difficulty, and examined the forest which is most interesting and differs entirely from the forest of the mainland. On the island the trees grow to no great height (20 feet to 25 feet) and the tops are kept well in order by the wind and form a compact mass. I saw some fine trees of *Veronica gigantea*, 20 feet high, in full flower, and *Senecio Huntii* just coming into flower. The commonest trees about this part were *Corynocarpus laurigata* (the Karaka), *Coprosma chathamica*, *Hymenanthera chathamica*, *Olearia Traversii*, *Corokia macrocarpa*, *Pseudopanax chathamicum* and *Suttonia chathamica*. The

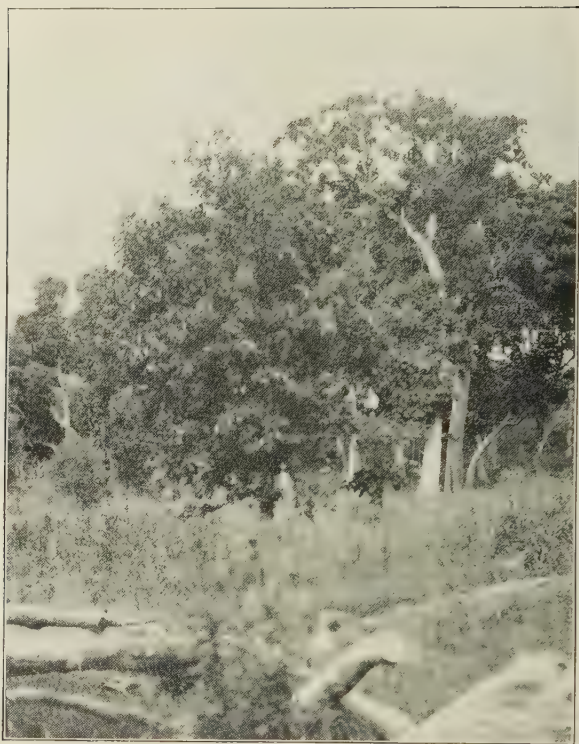
PSEUDOPANAX CHATHAMICUM.



VERONICA GIGANTEA.



[To face page 122.]



PLAGIANTHUS BETULINUS VAR. CHATHAMICUS.
CORYNOCARPUS LAEVIGATA.



GENERAL VIEW OF OLEARIA SEMIDENTATA Bog.



OLEARIA SEMIDENTATA.

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native pepper, *Piper excelsum*, was fairly common and the whole was entwined with endless Supple Jacks (*Rhipogonum scandens*), while I saw at least five varieties of tree ferns, *Cyathea dealbata*, *C. medullaris*, *C. Cunninghamii*, *Dicksonia antarctica* and *D. squarrosa*, and a few *Raphiostyles sapida* dotted about. The floor of the forest is covered with moss and lichens especially on the dead stumps, while filmy and other ferns abound. We also visited a sphagnum bog close by and obtained a bag of moss for packing up the plants. The sphagnum patches were colonized by several plants, chiefly *Gleichenia dicarpa* and some *Pteris esculenta*, and I was much struck with the lovely little *Pratia arenaria* which seemed to grow anywhere and everywhere, and closely resembles the well-known *Pratia angulata*, so lovely on moist rockeries at home. Some months previously Mr. Cox had collected several plants of *Olearia semidentata* and *Styphelia robusta*, which had become established in his garden and were growing well, and it is due to his kindness in collecting them for me that I was able to leave with a large number of both of these plants. I was interested to see some fine plants of *Olearia chathamica* growing there and also a fine plant of *Olearia Lyallii*, introduced from Ewing Island in the Auckland Island group, as well as other of the native trees. Dr. Cockayne was anxious to obtain seedling forms of *Veronica gigantea*, and these I found about the shrubberies; in form they are very different to the mature trees, the leaves being larger and covered with downy hairs while the stems are of a reddish-purple colour.

I was now anxious to get farther afield towards the Horns at the southern part of the island, and was fortunate in finding Mr. W. Jacobs, who volunteered to accompany me. It had rained 15 parts during the day, and the next morning broke thick and foggy, delaying our start, but we got away on horseback about 9 a.m. and travelled south, our destination being Mr. Blyth's place, about 15 miles off. The track, for there are no roads, lay over the higher country, undulating and boggy with occasionally a deep ravine through which flowed a small river considerably swollen by the rains. The country over which we passed was covered with *Pteris esculenta* (the Bracken fern) some *Phormium tenax*, *Dracophyllum arboreum* and *Styphelia robusta* in the drier parts, while *Dracophyllum paludosum* occupied the more swampy ground. The fog was fairly thick, and I could get no general view of the island, and it was so boggy that we constantly had to dismount and lead over the bad places, while at the best the horses were nearly up to their hocks in the peat. After some time we came across *Olearia semidentata* in full flower; it is a beautiful sight, covered with its purple daisy flowers like a glorified Michaelmas Daisy; the ray florets are light mauve and the centre is a dark purple. Masses of plants were to be seen, the largest being about 3-4 ft. high, and in places where patches had been burnt seedlings were coming up in thousands. I endeavoured to photograph some of them, but it was most difficult in the wind and fog. A peculiar kind of rush-like grass, *Lepyrodia Traversii*, seems to grow in association with *Olearia semidentata* and greatly helps to harden the bog and make it easier to walk about on. The beautiful

Epacrid *Dracophyllum paludosum* was also in full flower, and the white patches made a lovely contrast with the *Olearia* and the brilliant red berries of *Styphelia robusta*, a combination which existed on the edges of the drier ground. At last we came to a lonely steep gully full of bush, including tree ferns and *Senecio Huntii* in abundance, where we halted for lunch and where in spite of the fog I was able to obtain some good photographs. Eventually we arrived at the Te Tuku gully—very steep and precipitous—across which a bad track led. The gully at the mouth where we crossed is about 600 ft. high, about half-a-mile wide, and covered with bush. When we arrived at Mr. Blyth's house, about 4 o'clock, I explained to him that my mission was to obtain specimens of a rare plant (*Aciphylla Dieffenbachii*) which I had heard grew on the cliffs near his house, and he immediately led me to the spot. It was growing on the precipitous slopes of the cliffs, which are here 600 ft. high, one flowering plant only being accessible, which we obtained. The edge of the cliff was covered with *Phormium tenax*, long grass, some *Astelia nervosa*, *Veronica chathamica*, more erect than the type, and the lovely little pink or white flowered *Geranium Traversii*, while on a ledge of the cliff below I noticed some of the ordinary forest trees, also a mass of *Myosotidium nobile* (the Chatham Island Lily) and the giant nettle *Urtica australis*. I also found *Olearia chathamica* in abundance growing on the cliff a little farther along; also *Senecio lautus* and *S. radiolatus*. Through the kind hospitality of our hosts we stayed at Te Tuku the night, with the promise of more *Aciphylla Dieffenbachii* the next day. Sure enough, on a small detached cliff-island some two miles on our way back, Mr. Blyth showed me a quantity of it growing, and I was able to take good photographs and get some specimens and plants. Unfortunately only the male plants were still in flower, the females having already gone to seed. This was most disappointing, because Mr. T. F. Cheeseman in his Flora is inclined to agree with Mr. Kirk in considering that it will ultimately form the type of a new genus; but hitherto no flowering specimen of the female has been obtained. The plant is very scarce except in patches in inaccessible places, and is said to occur also on Pitt Island in places similar to where I found it. It is probable that it is a good deal scarcer than formerly, since it must have suffered from the depredations of cattle, which eat it readily wherever they can get at it. Other plants are similarly threatened with extinction, namely, *Myosotidium nobile*, *Phormium tenax* and *Aciphylla Traversii*.

"The weather continued foggy and damp all this time, but when we were nearly back again at Waitangi it cleared and came out a glorious evening, so that I was able to get a view at last. When next morning broke, however, it was as bad as ever, and it rained in torrents all that day and continued throughout the next, making it quite impossible to get about the country. On the 11th it seemed finer and I started off with Mr. Cox to visit the shores of the Great Lagoon (Te Whanga) and the country between it and Lake Huro. Growing on the low limestone cliffs bordering the lagoon I found *Styphelia Richei* (which does not occur in New Zealand, but is found again in New South Wales), *Styphelia robusta*, *Sophora tetraptera* (Koi), *Phormium tenax*, *Linum monogynum*, *Geranium*

ACIPHYLLA DUFFENBACHII.





OLEARIA SEMIDENTATA VAR. *ALBIFLORA*.

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Traversii, *Veronica Dieffenbachii* and *Samolus repens*, the latter a lovely little creeper, which like *Salicornia* seems to like a place where the salt spray can reach it. The *Samolus* resembles the plant found in New Zealand, but is altogether a finer thing and probably deserves the distinction of var. *chathamicus*. The country between the lagoon and Lake Huro, and especially along the lagoon coast, is very pretty and park-like, and the forest trees growing close together form woods; here *Corynocarpus* reaches a maximum height of 45 ft. with a stem thick in proportion, and the other forest tree are all larger than I had before seen them; in these woods occurs *Plagianthus chathamicus*, referred by Cheeseman to *P. betulinus*. It appears to differ in having larger flowers and foliage; and as the small-leaved form of the mainland is not present in the Chathams, it seems reasonable to follow Dr. Cockayne and call it *P. chathamicus*. Before getting home we were wet through again; but during the morning I managed to get some photographs shewing *Veronica gigantea*, 20 feet high. Thus ended the first seven days of my visit, the total rainfall being 3.10 inches, with only once a glimpse of the sun. The 12th was spent in getting dry and in packing the plants, but I got wet again after a short excursion into the Lake Huro swamp in search of *Carex*. In the evening our steamer, which had been dodging round the island as well as visiting Pitt Island, collecting wool all the week, appeared on the scene, but as I soon learned from the captain that he had yet two more days' work down the coast and loading at Weitangei, I started off with Mr. Cox on the 13th, which was fine and calm, for what is known as the Tobacco country. This district is so called not because it grows tobacco; but because it was once purchased for a few cigars. It is the country lying southward and comprises the highest ground, worst bogs and greatest quantity of *Olearia semidentata*; the place of all others I was longing to get to, but up till now quite impossible owing to the bad state of the weather. The way first led through fine pasturage and patches of lowland forest including a very fine patch of *Cyathea Cunninghamii*; out on the moorland we saw *Dracophyllum arboreum* and *Styphelia robusta*—a bush of the latter standing isolated attracted my attention more than 200 yards off by the scarlet colour of its berries. After crossing a fine gully, in which was *Senecio Huntii*, the giant groundsel, in full flower, the ground about a mile further on became wetter and *Dracophyllum paludosum*, tiny plants a mass of flower, appeared; soon came *Olearia semidentata*, at first odd plants, then in masses, acres and acres of it everywhere and in full flower, and presently we found *Olearia chathamica* scattered about, and next came to a large bog all yellow with sphagnum and green apparently with water cress, patches of flax here and there, and also *Carex appressa* var. *sectoides*. Here we halted for lunch and I discovered several bushes of an entirely white form of *O. semidentata*, unknown to Mr. Cox; he also found a lovely pink variety. Through the bog flowed a small stream, and it seemed there would be a difficulty in obtaining water to wash down our sandwiches; but on getting nearer I discovered the supposed water cress to be a mass of *Marchantia cephaloscypha* and that one could walk on it everywhere, as it formed a crust over the surface of the bog. On

going farther across the bog I was surprised to find a very large area of this Liverwort nearly an acre in extent, growing on a considerable slope, so much so that one could slide on it. The ground at its edges was some feet higher, irregular, and covered with *O. semidentata*; it immediately gave me the idea of a glacier, the lateral moraines being formed by the *Olearia*. I obtained several photographs of this remarkable formation which I called the "glacial bog" as a distinction from the *Olearia-Lepyrodia* bog. The day was fine throughout and by far the most enjoyable one I had spent on the island; we returned early in order that I might pack the plants obtained, which included one nice plant of the white variety of *O. semidentata*. The 14th was spent in embarking the plants and re-packing them into a Wardian case which I had on board, and we sailed in the evening about 6 p.m., reaching Lyttelton on 17th just in time to catch the evening boat to Wellington, where I left the plants ready to bring them to England on the 30th December. Thus ended a very rough but interesting trip, in which I was very greatly assisted by the kindness and hospitality of the inhabitants of the Chatham Islands. My thanks in particular are due to Mr. Cox and Mr. Alec. Shand."

XVIII.—DIAGNOSES AFRICANAE : XXXV.

1081. *Brachylaena Hutchinsii*, *Hutchinson* [Compositae - Inuloideae]; a *B. huillensi*, O. Hoffm., foliis lanceolatis vel oblanceolatis basi longe attenuatis, et a *B. Merana*, Baker, foliis petiolis et paniculis minoribus differt.

Arbor, 27-30 m. alta, cortice laevi pallide cinereo fere albo; ramuli floriferi late sulcati, juniores pallide tomentelli. *Folia* lanceolata vel oblanceolata, apice sensim et acute acuminata, basi in petiolum acute attenuata, 4.5-10 cm. longa, 1-2.5 cm. lata, tenuiter coriacea, supra parce lanata, demum glabra, arcte reticulata, subtus lanato-tomentosa, nervis lateralibus utrinque 10-11 subtus elevatis arcuatis prope marginem divaricatis, venis subtus plerumque inconspicuis; petioli usque ad 7 mm. longi, lanati. *Paniculae* lanatae, in axillis foliorum saepius delapsorum apices versus ramorum dispositae; ♂ laxae pedunculatae, ♀ densae, subsessiles; bracteae oblongae, obtusae, 2.5 mm. longae. *Capitula* ♂ breviter pedicellata, circiter 12-flora. *Involucri bracteae* 3-seriatae, extus parce lanatae, intus concavae, glabrae et nitidae; exteriores ovato-lanceolatae, obtusae vel subacutae, 2.5 mm. longae, 1 mm. latae, interiores oblongo-lanceolatae, subacutae, dorso leviter carinatae, 4 mm. longae, 1.25 mm. latae. *Achaenii rudimentum* brevissimum. *Pappi setae* valde inaequales, minute barbellatae, usque ad 3 mm. longae. *Corolla* tubulosa, ad medium 5-lobata, glabra; tubus 2 mm. longus, lobis linearibus subacutis. *Stylus* integer, apice subelavatus. *Capitula* ♀ subsessilia, circiter 5-flora. *Involucri bracteae* quam ♂ paulo majores. *Achaenia* oblonga, subteretia, 5 mm. longa, 1.5 mm. diametro, pilosa. *Pappi setae* 2-seriatae, minute barbellatae, exteriores 4 mm. longae, interiores 6 mm. longae. *Corollae tubus* cylindricus, 5 mm. longus, glaber, lobis 5 inaequalibus usque ad 1 mm. longis. *Stylus* exsertus, teres, bifidus, glaber.

TROPICAL AFRICA. British East Africa : Nairobi, *Battiscombe*, 27, 54 ; *Hutchins*.

The species is named in compliment to Mr. D. E. Hutchins of the British East African Forestry Department.

Mr. E. Battiscombe has supplied the following information regarding this tree : Native name "Muhugu" ; Ibean Sandal Wood ; a tall tree, 90-100 feet high in the forests, at an elevation of 5000-6000 feet ; occurs also in the coast forests ; bark smooth, light grey to almost white, peeling off in long narrow shreds. Timber white, hard, easily worked, scented when freshly cut ; splits easily, durable and not eaten by termites. Weight 60 lbs. per cubic ft. when air-dried ; no visible heartwood, annual rings and medullary rays not visible. Crown thin, confined to upper fourth of the stem ; branches upright, not spreading.

1082. *Macaranga Paxii*, *Prain* [Euphorbiaceae - Crotonaeae] ; affinis *M. Zenkeri*, Pax sed foliis longius acuminatis, parce sed persistenter pilis longiusculis albis subtus secus nervos obsitis, stipulis majoribus, bracteis masculis minoribus obtusis crenatisque differt.

Frutex vel *arbuscula*, ramis glabris hinc inde spinis rectis ad 8 mm. longis armatis. *Folia* longe petiolata, ovata, 10-20 cm. longa, 7.5-10 cm. lata, longe acuminata, basi 3-nervo rotundata deinde pennivenia, margine argute grosse dentata, membranacea, juniora pubescentia praesertim subtus, aetate supra glabra, subtus parce pilis albis induta : petiolus 7.5-10 cm. longus, glaber ; stipulae ovatae, acutae, margine ciliatae, 2.5-2.7 cm. longae. *Flores masculi* in paniculas laterales 10 cm. longas, ramis plurimis 2.5 cm. longis dispositi ; rhachis minute lepidoto-puberula ; bractee suborbiculares, obtusae, grosse crenatae, florum fasciculos subtendentes. *Alabastra* globosa, minuta, puberula. *Stamina* saepissime 2, raro 1. *Flores feminei* ignoti.

TROPICAL AFRICA. Lower Guinea : Cameroons ; Yaunde, *Zenker & Staudt*, 106.

Very nearly related to *M. Zenkeri*, Pax, and its allies *M. monandra*, Muell.-Arg., and *M. togoensis*, Pax, but readily distinguished from all three by its larger stipules and its crenate, not dentate, bracts, which are much smaller than in *M. Zenkeri* or *M. monandra*, but in size much resemble those of *M. togoensis*.

1083. *Macaranga Rowlandii*, *Prain* [Euphorbiaceae-Crotonaeae] : species *M. Barteri*, Muell.-Arg., quam maxime affinis, sed petiolis brevioribus et foliis basi manifeste cuneatis differt.

Arbuscula, ramis glabris inermibus. *Folia* petiolata, oblanceolato-oblonga, 7.5-10 cm. longa, 3.75-4.5 cm. lata, breviter abrupteque acuminata, margine integra, basi cuneata, utrinque glabra, supra viridia subtus pallidiora et glandulis parce obsita, pennivenia ; petiolus 2-3.5 cm. longus ; stipulae lanceolatae, caducae. *Flores masculi* in paniculas laterales angustas 3.75 cm. longas ramis 4-6 mm. longis dispositi ; rhachis glabra vel minute parce puberula ; bractee ovatae, cuspidatae, breve dentatae, minute puberulae, 5 mm. longae. *Flores feminei* ignoti.

TROPICAL AFRICA. Upper Guinea : Western Lagos, *Rowland* ; Gold Coast, *Farmar*, 454.

Very nearly allied to *M. Barteri*, but smaller in all its parts and readily distinguished by the truly cuneate leaf bases which do not form two small auriculate lobules, with usually a distinct gland on their upper surface, which characterise the leaf bases of *M. Barteri*.

1084. *Tragia* (*Tagira*) *Benthami*, *Baker* [Euphorbiaceae-Crotonae]; species *T. cordifoliae*, Vahl, affinis sed segmentis calycis feminei paucioribus—utrinque 2–3 nec 6–10—facillime distinguenda.

Caulis elongatus, volubilis, gracilis, glaber vel parce hispidus. *Folia* longe petiolata, 5–10 cm. longa, 3·5–5 cm. lata, acuta, argute dentata, basi saepissime alte cordata, membranacea, utrinque parce hispida; stipulae ovato-lanceolatae. *Racemi* laterales terminalesque, breviter pedunculati, 3–5 cm. longi; alabastra mascula globosa, 1 mm. lata; bracteae ovatae vel lanceolatae. *Flores feminei* 1–2. *Sepala* 6, viridia, matura 8 mm. longa, dense hispida; rhachis anguste lanceolata segmentis linearibus utrinque 2–3. *Styli* dimidio inferiore connati. *Capsula* hispida, 8 mm. lata; cocci globosi.—*T. cordifolia*, Benth. in Hook. Fl. Nig. 501; Muell.-Arg. in DC. Prodr., xv. 2, 944; Hiern, Cat. Afr. Pl. Welw. 984; nec Vahl.

TROPICAL AFRICA. Upper Guinea; Ashanti, *Cummins*; Fernando Po and Cape Coast, *Vogel*; Cameroons, *Mann*, 1255; *Zenker & Staudt*, 516; Abeokuta, *Millen*, 80. Nile-land; Uganda, *Dawe*, 5. Lower Guinea: Angola, *Monteiro*; Loanda, *Gossweiler*, 427; Golungo Alto, *Welwitsch*, 381. Mozambique Dist.: Nyasaland; Namasi, *Cameron*.

1085. *Sebastiania inopinata*, *Prain* [Euphorbiaceae-Crotonae]; species americanae *S. multirameae*, Mart., quam maxime affinis et ab ill. Muellero cum ejus varietate *Luschnathiana conjuncta*, differt tamen foliis magis acuminatis, filamentis brevioribus basi distincte connatis.

Frutex, 2·5–3·5 m. altus, undique glaber, ramis gracilibus patulis teretibus. *Folia* breviter petiolata, ovata vel elliptico-ovata, distincte acuminata, basi rotundata, eglandulosa, margine integra, subcoriacea, 6–8 cm. longa, 3–4·5 cm. lata, supra subnitida, subtus pallidiora, nervis utrinque circiter 6; petiolus 6–8 mm. longus. *Spicae* axillares, 1·5 cm. longae, multirameae, graciles, cylindraceae; bracteae masculae ovatae, acutae, margine undulatae, 3–5-florae. *Calycis* lobi 2 vel 3, suborbiculares, margine undulati. *Stamina* 2 vel 3, filamentis brevibus connatis.—*S. multiramea* var. *Luschnathiana*, Muell.-Arg., in DC. Prodr., xv. 2, 1177 partim et quoad spp. Africana tantum.

TROPICAL AFRICA. Upper Guinea: Cameroons; banks of the Cameroon River, *Mann*, 755, 2225; Bipinde, *Zenker*, 3225.

This species is so like and so closely allied to *Stillingia Luschnathiana*, Baill. (*Sarothrostachys Luschnathiana*, Kl.), that the late Dr. Mueller has treated it as identical with that Brazilian plant, which he further considers to be a variety of *Sebastiania multiramea*, a species widely spread in that country. The leaves of the African plant differ very little in shape from those of its Brazilian ally, but they are more rounded at the base, have a more distinctly prolonged acuminate apex and rather fewer pairs of lateral nerves. The differences in the male flowers of the two, however, render it advisable to keep them apart. The female flowers of the African species have not yet been communicated.

1086. *Kniphofia Wyliei*, N. E. Brown [Liliaceae]; affinis *K. pauciflorae*, Baker, sed foliis scapo aequilongis, floribus numerosioribus confertis lacteis et pedicellis duplo brevioribus differt.

Folia 30–45 cm. longa, 3–5 mm. lata, linearia, acuta, glabra, marginibus laevibus. *Scapus* cum racemo 8–10 cm. longo folia subaequans. *Bractee* 5–6 mm. longae, concavo-ovatae, acutae, patentēs vel deflexae, membranaceae. *Flores* plus minusve deflexi. *Pedicelli* 1–1.5 mm. longi. *Perianthium* anguste infundibuliforme, supra ovarium leviter constrictum, lacteum; tubus 1.3–1.4 cm. longus; lobi 2 mm. longi, ovato-oblongi, obtusi. *Stamina* haud exserta, antheris nigris.

S. AFRICA. Zululand; at an altitude of between 600 and 900 m., *Wylie in Herb. Wood*, 8996.

1087. *Schoenoxiphium filiforme*, Kükenthal [Cyperaceae-Cariceae]; species ab omnibus hujus generis inflorescentia ad spiculam unicum reducta et spiculis partialibus demum divaricatis vel ima decurvato-reflexa toto coelo diversa.

Laxe caespitosa. *Culmi* plures, 15–25 cm. alti, filiformes, subincurvi, obtuse trigoni, laeves, inferne vaginis aphyllis brunneis costatis et foliis paucis obsiti. *Folia* culmo breviora, filiformi-convoluta, marginibus apicem versus minute scabra, pallide viridia, stricta, rigida. *Spicula* unica terminalis (raro altera sterilis, distans, bractea brevi vaginante suffulta adest) ebracteata, florens in ambitu oblonga, fructifera ovata, 6–12 mm. longa, pauci- et laxiflora. *Spicula* partialis terminalis ♂, laterales 3–5 androgynae (rarius abortu uniflorae ♀), 4–6 mm. longae, primo oblique patentēs, demum divaricatae vel ima decurvato-reflexa, sessiles. *Squamae* lanceolatae, acuminatae, ferrugineae, e carina viridi plerumque aristulatae, demum caducae. *Prophyllum* squamam excedens, oblongo-ellipticum, 3.5 mm. longum, obtuse trigonum, pallide virens, multicostatum, glabrum, basi spongiosum, marginibus ad $\frac{2}{3}$ vel in spiculis ♀ fere usque ad apicem connatis, in rostrum conspicuum ferrugineum ore albo-hyalino oblique sectum postice bifidum attenuatum. *Nux* oblongo-elliptica, 2.5 mm. longa, trigona, lateribus concavis. *Styli* basis conica, decidua. *Stigmata* 3, mediocriter longa. *Rhachilla* secundaria complanata, viridis, binervis, apice non auriculata, nuce brevior.

S. AFRICA. Cape Colony: Summit of Great Winterberg, under rocks, 2570 m., *Galpin*, 5605.

The discovery of this species supports my view that the evolution of the Caricoideae has started from *Schoenoxiphium* (see Kükenthal, in Engler's Pflanzenreich, Heft 38, 1909, p. 24). This becomes especially evident if we compare *Schoenoxiphium filiforme* with *Carex microglochis*. Both species have the same habitus, the same filiform-convoluted leaves, the same simple inflorescence. Both possess utricles which become deflexed as they mature, and both have in common a morphologically very important character, namely, early deciduous female scales. Thus the only essential difference left is in the perfect formation of the partial spikelets in *Schoenoxiphium filiforme*: a basal fertile ♀ flower and several ♂ flowers, the later terminating an elongated secondary axis, whilst in *Carex microglochis* the ♂ flowers are suppressed and the secondary axis is reduced to a

rudiment. In these circumstances it appears necessary to divide the genus *Schoenoxiphium* into two subgenera which may be characterised as follows:

A. *Galpinia* Kükenthal.—Spicula unica terminalis ebracteata. Spiculae partiales demum divaricato-reflexae. Squamae caducae.

B. *Eu-Schoenoxiphium* Kükenthal.—Spiculae plures spicatum vel paniculatum dispositae bracteatae. Spiculae partiales oblique patentes. Squamae persistentes.

1088. *Aristida Galpinii*, Stapf [Gramineae-Stipeae]; affinis *A. Burkei*, Stapf et *A. bipartitae*, Rupr. & Trin., ab utraque habitu paniculae et dimensionibus spicularum partium distincta.

Herba perennis, dense caespitosa, innovationibus numerosis cum culmis floriferis arcte fasciculatis; culmi circiter 25 cm. alti, graciles, laeves, glabri, 1-nodi, internodiis exsertis. *Folia* praeter ligulas et vaginarum ora glabra, pallide viridia; vaginae arctae, inferiores pallidae, paulo compressae, persistentes, ad ora pilis ad 4 mm. longis tenuissimis barbatae, summa saepe violascens, glabra; ligulae brevissimae, ciliolatae; laminae angustissimae, lineari-setaceae, acutae, 10–15 cm. longae, explanatae 1 mm. latae, rigidae vel subflexuosae, plicatae, subtus laeves, supra aspero-puberulae. *Panicula* subcontracta, oblonga, laxa, flexuosa, 2–2.5 cm. longa; rhachis ramique filiformes; rami distantes, solitarii, infimi 3–4 cm. longi (spiculis demptis), ad 1 cm. indivisi, 4 vel uti caeteri tantum 2-spiculati; pedicelli scaberuli, inaequales, longiores circiter 6–10 mm. longi. *Spiculae* 10 mm. longae, stramineae et luride purpureo-variegatae. *Glumae* inaequales, lineari-lanceolatae, subito vel sensim acutatae et mucronulatae, inferior 6–8 mm. longa, superior circiter 10 mm. longa. *Valva* lanceolata, vix rostrata, cum callo brevi barbato ad 9 mm. longa, laevis nisi in dorso subrotundo asperula, purpurascens, haud cum arista articulata; aristae setiformes, oblique divergentes, intermedia ad 2 cm. longa, laterales paullo breviores.

S. AFRICA. Cape Colony: Barkly East Division; Ben McDhui (Wittebergen), 2820 m., *Galpin*, 6900.

1089. *Agrostis subulifolia*, Stapf [Gramineae-Agrosteae]; inter species africanas nulli arcte affinis, foliis subuliformibus innovationum in caespitem congestarum et panicula aperta rigidula parva distincta.

Herba perennis, dense caespitosa; culmi stricte erecti, graciles, 18–20 cm. alti, nodo unico suprabasali, internodio longe exserto; innovationes numerosi, arcte congesti, vaginis emarcidis obtectae. *Folia* glabra, innovationum 4–6; vaginae arctae, tenues, striatae, apertae; ligulae elongatae, 2–3 mm. longae; laminae rigidae, plicatae, subulato-setaceae, obtusiusculae, 2.5–3 cm. longae, explanatae ad 0.8 mm. latae, 4–5-sulcato-striatae; folium caulinum unicum, vagina 6–7 cm. longa, lamina 1.5–2.5 cm. longa. *Panicula* aperta, ambitu ovata, 5–6 cm. longa, rigidula; rhachis ramique laeves; rami geminati vel infimi 3–4-ni, obliqui, inaequilongi, ad 3.5 cm. longi, ad medium indivisi, uti ramuli pedicellique filiformes; ramuli pauci, spiculas 3–1 gerentes; pedicelli 3–1.5 mm. longi. *Spiculae* lanceolatae, acutae, e purpureo et stramineo variegatae, 3 mm. longae, glabrae laevesque. *Glumae* aequales, sub-3-nerves, nervis

lateralibus tenuibus brevibus, apice stramineo-hyalinae. *Valva* explanata, late ovato-oblonga, truncata, subhyalina, 2 mm. longa, glabra, inferne 5-, supra 4-nervis, nervis in mucronulos minutissimos excurrentibus tenuissimis, arista setiformi e medio orta valvam vix superante. *Palea* valvae subaequilonga, 2-nervis. *Rhachillae* continuatis obscura. *Anthera* 1.5 mm. longa. *Caryopsis* 1.5 mm. longa.

S. AFRICA. Cape Colony; Barkly East Division; damp slopes of Ben McDhui (Wittebergen), 2880 m., *Galpin*, 6911; in a marsh at the base of Doodman's Krans Mtn., 2550 m., *Galpin*, 6910.

1090. *Melica brevifolia*, *Stapf* [Gramineae-Meliceae]; affinis *M. racemosae*, Thunb. et *M. ovali*, Nees, ab utraque statura humili, foliis brevibus pro ratione latiusculis, inflorescentia racemosa et valvae inferioris parte hyalino magis producta pilos superante distincta.

Herba perennis; culmi floriferi 12-18 cm. alti, cum innovationibus 5-7 cm. longis e rhizomate praemorso fasciculati, erecti vel breviter ascendentes, multinodi, internodiis summis longe exsertis laevibus, basi tenues, tenaces. *Folia* perfecta supra culmorum bases congesta, infima fere ad vaginas arctas, summa ad squamas vaginantes bracteiformes reducta; vaginae arcte sulcato-striatae, scaberulae vel scabridae, reverse pilosulae, primo clausae, tandem magis minusve fissae; ligulae hyalinae, 0.5 mm. longae, antice in lobum latum obtusissimum productae, vaginae os cingentes, lobo antico demum in auriculas fisso; laminae lineares, superne longe attenuatae, acutae, 3-4 cm. longae, 3-4 mm. latae, planae vel superne involutae, rigidae, scabridulae, glaucae, nervis lateralibus utrinque circiter 7 supra prominentibus. *Panicula* ad racemum angustum circa 10-12 spiculatum secundum 3 cm. longum reducta, spiculis infimis geminatis caeteris solitariis; pedicelli 7-2 mm. longi, filiformes, longiores flexuosi, pubescentes. *Spiculae* stramineae, 7 mm. longae, anthoeciis fertilibus 2 vel 1. *Glumae* inaequales, inferior late ovata, breviter acuta, 4 mm. longa, 2.3-2.5 mm. lata, subhyalina, nervis lateralibus tenuibus brevibus utrinque 1-2, superior a latere visa oblonga, subacuminata acuta, 5.5-6 mm. longa, 2.5-3 mm. lata (explanata), scariosa, apice hyalina, scaberula, nervis lateralibus utrinque 2 ad medium attingentibus. *Valva* infima a latere visa suboblique lanceolata, latiuscule acuminata, 6.5 mm. longa, 9-nervis, nervis prominulis scabridis, ad latera pilosa, pilis 3 (inferioribus)—2 mm. longis, acumine hyalino; valva secunda praecedenti similis, nisi minor et interdum sterilis, glumam superiorem aequans vel subsuperans; valvae caeterae vacuae, parvulae, glabrae, in corpus obovoideo-globosum congestae.

S. AFRICA. Cape Colony: Fort Beaufort Division; mountain sides on Great Winterberg, 2220 m., *Galpin*, 5614.

This has the tufted and dwarfed growth and short racemose inflorescence that characterise *M. pumila*, Stapf, which comes from the same area; but it is readily distinguished by the broad leaves, larger spikelets and unequal glumes.

XIX.—MISCELLANEOUS NOTES.

Mr. T. F. CHIPP, B.Sc. (*K.B.*, 1909, 424), has been appointed by the Secretary of State for the Colonies an Assistant Conservator of Forests in West Africa.

Botanical Magazine for April.—The plants figured are : *Typhonodorum Lindleyanum*, Schott (t. 8307) ; *Saxifraga Grisebachii*, Degen et Dörfel. (t. 8308) ; *Rhododendron Harrovianum*, Hemsl. (t. 8309) ; *Dipelta floribunda*, Maxim. (t. 8310) ; and *Cornus Nuttallii*, Audubon (t. 8311).

The *Typhonodorum* is an evergreen Aroid with a stout stem reaching a height of 10 ft., and long-stalked deeply cordate or sagittate leaves, of which the blade is sometimes as much as $3\frac{1}{2}$ ft. long. Its spathe is $1\frac{1}{2}$ –2 ft. long, with a green tube and a yellow blade. The species is a native of Madagascar, and on account of its edible seeds it has been introduced into the Island of Johanna in the Comoros, into Mauritius, and it is believed also into Reunion. The Kew plant was presented in 1905 by the Royal Botanic Garden, Dahlem, Berlin. *Saxifraga Grisebachii*, from South East Europe, has encrusted basal leaves growing in a dense rosette, and reddish densely glandular-hairy stem-leaves with green tips. Its flowers have a reddish-purple calyx and purple petals. This species was introduced into cultivation in 1902. *Rhododendron Harrovianum* is a new species from Western China, whence seeds were sent to Messrs. James Veitch & Sons by Mr. E. H. Wilson. The species has proved to be one of the hardiest of those recently introduced from China. At Coombe Wood its somewhat small violet-purple flowers were produced for the first time in 1907. *Dipelta floribunda* is a very ornamental flowering-shrub belonging to the Caprifoliaceae, and is another of the numerous additions made to our gardens during the last few years by Messrs. Veitch. The seeds of this plant were collected at altitudes of from 6500 to 8000 ft. above sea-level in Western China. *Cornus Nuttallii* is a native of Western North America, and has been in cultivation in the British Isles for the last 70 years. Its involucre is whitish and tinged with yellow or sometimes with pink, and measures up to 6 inches across. The flowering branch depicted in the Magazine was supplied by a Kew plant, which was purchased in 1904, and the fruit came from Mr. B. E. C. Chambers, of Haslemere, who possesses probably the finest plant grown in this country.
